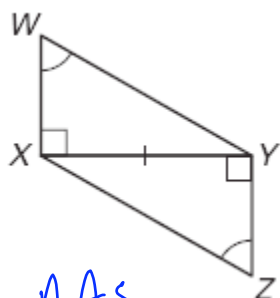


Geometry Date_____ 4.5 Assignment Using Congruent Triangles (pp 229–230)

1. What is your name?

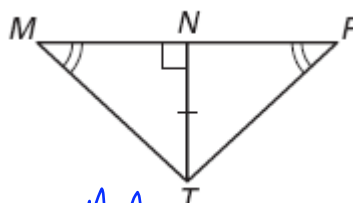
Use the marked diagram to state the method used to prove the triangles congruent. Name the additional corresponding parts that could then be concluded to be congruent.

2.



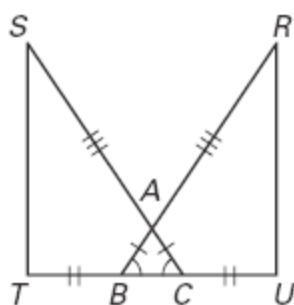
AAS
 $\overline{WX} \cong \overline{YZ}$
 $\overline{WY} \cong \overline{XZ}$
 $\angle WYX \cong \angle YXZ$

3.



AAS
 $\overline{MN} \cong \overline{NP}$
 $\overline{MT} \cong \overline{PT}$
 $\angle MTN \cong \angle PTN$

4.

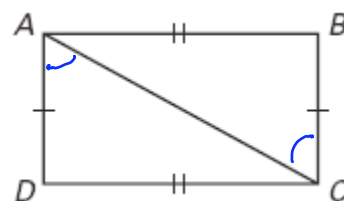


SAS
 $\overline{ST} \cong \overline{RU}$
 $\angle S \cong \angle R$
 $\angle T \cong \angle U$

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5. Complete the proof by supplying the statements or reasons.

Given: $\overline{AD} \cong \overline{BC}$
 $\overline{AB} \cong \overline{DC}$



Prove: $\overline{AD} \parallel \overline{BC}$

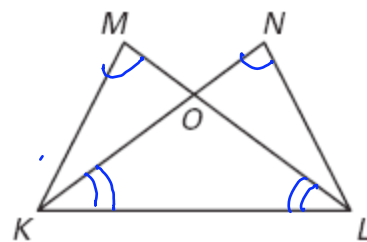
Statement	Reason
1.	1. Given
2. $\overline{AC} \cong \overline{AC}$	2.
3.	3. SSS congruence postulate
4. $\angle DAC \cong \angle BCA$	4.
5. $\overline{AD} \parallel \overline{BC}$	5.

Write a two-column or a paragraph proof.

Given: $\angle M \cong \angle N$

6. $\angle OKL \cong \angle OLK$

Prove: $\overline{MO} \cong \overline{NO}$



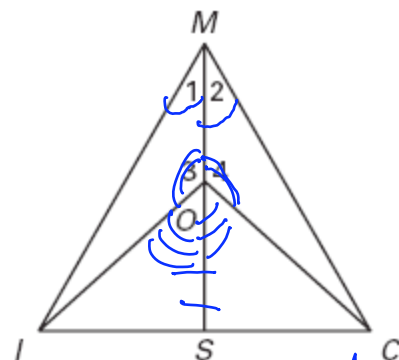
It is given that $\angle M \cong \angle N$ & $\angle OKL \cong \angle OLK$. Next, by the reflexive property of congruence, $\overline{KO} \cong \overline{LO}$. Thus $\triangle MOK \cong \triangle NOL$ by AAS. Therefore $\overline{MO} \cong \overline{NO}$ by definition of \cong \triangle 's.

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Given: $\angle 1 \cong \angle 2$

7. $\angle 3 \cong \angle 4$

Prove: $\triangle ISO \cong \triangle CSO$



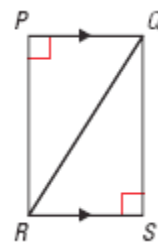
Statement	Reason
1. $\angle 1 \cong \angle 2$ $\angle 3 \cong \angle 4$	1. Given.
2. $\overline{MO} \cong \overline{MO}$	2. Reflexive property of \cong .
3. $\triangle MOI \cong \triangle MOC$	3. ASA
4. $\angle 3$ & $\angle IOS$ are supplementary. $\angle 4$ & $\angle COS$ are supplementary.	4. Linear pair postulate

Statement	Reason
5. $\angle IOS \cong \angle COS$	5. Congruent Supplements Thm.
6. $\overline{IO} \cong \overline{CO}$	6. CPCTC
7. $\overline{OS} \cong \overline{OS}$	7. Reflexive
8. $\triangle ISO \cong \triangle CSO$	8. SAS

Multiple Choice.

8. E Suppose $\overline{PQ} \parallel \overline{RS}$. You want to prove that $\overline{PR} \cong \overline{SQ}$. Which of the reasons below would **not** appear in your two-column proof?

- A. AAS theorem.
- B. Alternate interior angle theorem.
- C. Reflexive property of congruence.
- D. Right angle congruence theorem.
- E. SAS congruence postulate



9. C Which statement correctly describes the congruence of the triangles in the diagram?

- A. $\triangle PRQ \cong \triangle SRQ$
- B. $\triangle QRS \cong \triangle PQR$
- C. $\triangle SRQ \cong \triangle PQR$
- D. $\triangle SRQ \cong \triangle RQP$

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Using Congruent Triangles (pp 229–230)

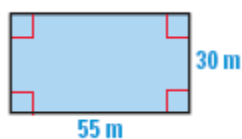
Geometry Date_____ 4.5 Assignment Using Congruent Triangles (pp 229–230)

Review.

Find the perimeter (or circumference) and area of the figure.

(Chapter 1 Section 7)

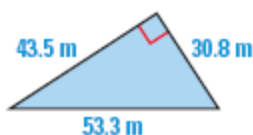
10.



$$P = 170 \text{ m}$$

$$A = 1650 \text{ m}^2$$

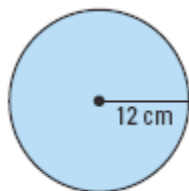
11.



$$P = 127.6 \text{ m}$$

$$A = 669.9 \text{ m}^2$$

12.



$$C \approx 75 \text{ cm}$$

$$A \approx 452 \text{ cm}^2$$

Solve the equation and state a reason for each step. (Chapter 2 Section 4)

13. $x + 11 = 21$

$$\begin{array}{l|l} x+11 & \text{Given} \\ \hline x=10 & - = \end{array}$$

14. $3(x - 1) = 16$

$$\begin{array}{l|l} 3(x-1)=16 & \text{Given} \\ 3x-3=16 & \text{Distributive property} \\ 3x=19 & + = \\ x=\frac{19}{3} & \div = \end{array}$$

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Using Congruent Triangles (pp 229-230)

15. $9x + 2 = 29$

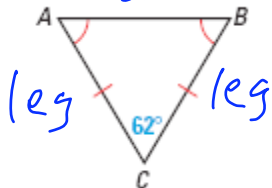
$$\begin{array}{l|l} 9x + 2 = 29 & \text{Given} \\ 9x = 27 & - = \\ x = 3 & \div = \end{array}$$

16. $6(2x - 1) + 15 = 69$

$$\begin{array}{l|l} 6(2x - 1) + 15 = 69 & \text{Given} \\ 12x - 6 + 15 = 69 & \text{Distributive Property} \\ 12x + 9 = 69 & \text{combine like terms} \\ 12x = 60 & - = \\ x = 5 & \div = \end{array}$$

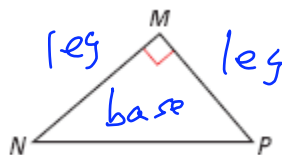
Classify the triangle by its angles and by its sides. Identify the legs and the hypotenuse of any right triangles. Identify the legs and the base of any isosceles triangles. (Chapter 4 Section 1)

17. base



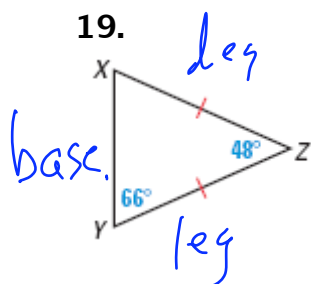
Acute isosceles

18.



right scalene

19.



Acute isosceles